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Editor in Chief

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... mixture made with alcohol, petroleum ether, water, hydrochloric acid and resins, starches, reducing sugars, proteins, fats, esters, free acids, and so on; this type of analysis of solid fuels is used as a prediction to be made as to how the fuel will behave in a furnace. ('prik-sa-mat a 'so-lid-ə-çis)

**proximity detector** [ENGINEERING] A sensing device that produces an electrical signal when approached by an object or when approaching an object. ('prik-sim-əd-ə-dutek-tər)

**proximity sensor** [CONTROL SYSTEMS] Any device that measures short distances within a robotic system. Also known as noncontact sensor. ('prik-sim-əd-ə-sen-sər)

**ps** [MECHANICS] See picosecond.

**ps** [MECHANICS] See picosecond.

**psf** [MECHANICS] See pound per square foot.

**psi** [MECHANICS] See pound per square inch.

**ppsi** [MECHANICS] See pounds per square inch absolute.

**psid** [ENGINEERING] See pounds per square inch differential.

**psig** [MECHANICS] See pounds per square inch gauge.

**psophometer** [ENGINEERING] An instrument for measuring noise in electric circuits, when connected across a 600-ohm resistance in the circuit under study; the instrument gives a reading that by definition is equal to half of the psophometric electromotive force actually existing in the circuit. ('sɒf-m-əd-ər)

**PSR** [ENGINEERING] See primary radar.

**psychointegroammeter** [ENGINEERING] See lie detector. ('sɪk-ɪn-ə-grə-m-əd-ər)

**psychogalvanometer** [ENGINEERING] An instrument for testing mental reaction by determining how skin resistance changes when a voltage is applied to electrodes in contact with the skin. ('sɪ-kɒ-gal-və-nəm-əd-ər)

**psychomotor performance** [INDUSTRIAL ENGINEERING] The degree of skill demonstrated by an operator in the completion of a task. ('sɪ-kə-məd-ər-pər-fɔ-məns)

**psychomotor task** [INDUSTRIAL ENGINEERING] An aspect of a job that requires the operator to use controlled movements of the body. ('sɪ-kə-məd-ər-task)

**psychosomatograph** [ENGINEERING] An instrument for recording muscular action currents or physical movements during tests of mental-physical coordination. ('sɪk-sə-məd-ə-graf)

**psychromatic ratio** [THERMODYNAMICS] Ratio of the heat-transfer coefficient to the product of the mass-transfer coefficient and humid heat for a gas-vapor system, used in calculation of humidity or saturation relationships. ('sɪ-kə-mad-ik-rə-sh)

**psychrometer** [ENGINEERING] A device comprising two thermometers, one a dry bulb, the other a wet or wick-covered bulb, used in determining the moisture content or relative humidity of air. ('sɪ-kə-m-əd-ər)

**psychrometric calculator** [ENGINEERING] A device for quickly computing certain psychrometric

data, usually the dew point and the relative humidity, from known values of the dry- and wet-bulb temperatures and the atmospheric pressure. ('sɪ-kə-m-əd-ər-trik 'tæl-kə-l-əd-ər)

**psychrometric chart** [THERMODYNAMICS] A graph each point of which represents a specific condition of a gas-vapor system (such as air and water vapor) with regard to temperature (horizontal scale) and absolute humidity (vertical scale); other characteristics of the system, such as relative humidity, wet-bulb temperature, and latent heat of vaporization, are indicated by lines on the chart. ('sɪ-kə-m-əd-ər-trik 'tʃɑrt)

**psychrometric formula** [THERMODYNAMICS] The semiempirical relation giving the vapor pressure in terms of the barometer and psychrometer readings. ('sɪ-kə-m-əd-ər-trik 'fɔ-m-yl-ə)

**psychrometric tables** [THERMODYNAMICS] Tables prepared from the psychrometric formula and used to obtain vapor pressure, relative humidity, and dew point from values of wet-bulb and dry-bulb temperature. ('sɪ-kə-m-əd-ər-trik 'tæ-bl-əz)

**psychrometry** [ENGINEERING] The science and techniques associated with measurements of the water vapor content of the air or other gases. ('sɪ-kə-m-ə-tri)

**public address system** [ENGINEERING/ACOUSTICS] See sound-reinforcement system. ('pab-lik ə 'dres-sis-təm)

**public area** [BUILDING CONSTRUCTION] The total nonrentable area of a building, such as public conveniences and rest rooms. ('pab-lik-er-ə-ə)

**public utility** [INDUSTRIAL ENGINEERING] A business organization considered by law to be vested with public interest and subject to public regulation. ('pab-lik yu'til-əd-ē)

**public works** [INDUSTRIAL ENGINEERING] Government-owned and financed works and improvements for public enjoyment or use. ('pab-lik 'wɜrks)

**puddle** [ENGINEERING] To apply water in order to settle loose dirt. ('pud-əl)

**puft** [MECHANICAL ENGINEERING] A small explosion within a furnace due to combustion conditions. ('pʌf)

**pug mill** [MECHANICAL ENGINEERING] A machine for mixing and tempering a plastic material by the action of blades revolving in a drum or trough. ('pʌg-mil)

**puking** [CHEMICAL ENGINEERING] In a distillation column, the foaming and rising of liquid so that part of it is driven out of the vessel through the vapor line. ('pyuk-ɪŋ)

**puller** [MECHANICAL ENGINEERING] A lever-operated chain or wire-rope hoist for lifting or pulling at any angle, which has a reversible ratchet mechanism in the lever permitting short-stroke operation for both tensioning and relaying, and which holds the loads with a Weston-type friction brake or a releasable ratchet. Also known as come-along. ('pʊl-ər)

**pulley** [DESIGN ENGINEERING] A wheel with a flat, round, or grooved rim that rotates on a shaft and carries a flat belt, V-belt, rope, or chain to transmit motion and energy. ('pʊl-ē)

in which the solid material to be ground is mixed with liquid. 2. A mill in which the grinding energy is developed by a fast-flowing liquid stream; for example, a jet pulverizer. ('wet 'mil)

**wet scrubber** [ENGINEERING] A device designed to clean a gas stream by bringing it into contact with a liquid. ('wet 'skrub-ər)

**wet sleeve** [MECHANICAL ENGINEERING] A cylindrical liner which is exposed to the coolant over 70% or more of its surface. ('wet 'sli:v)

**wet slip** [CIVIL ENGINEERING] An opening between two wharves or piers where dock trials are usually conducted, and the final fitting out is done. ('wet 'slip)

**wetted-wall column** [CHEMICAL ENGINEERING] A vertical column that operates with the inner walls wetted by the liquid being processed; used in theoretical studies of mass transfer rates and in analytical distillations; an example is a spinning-band column. ('wet-əd 'twel 'kæl-əm)

**wet-test meter** [ENGINEERING] A device to measure gas flow by counting the revolutions of a shaft upon which water-sealed, gas-carrying cups of fixed capacity are mounted. ('wet 'test 'mɪt-ər)

**wetting agent** [CHEMICAL ENGINEERING] A substance that increases the rate at which a liquid spreads across a surface when it is added to the liquid in small amounts. ('wet-ɪŋ ə-ʃənt)

**wet well** [MECHANICAL ENGINEERING] A chamber which is used for collecting liquid, and to which the suction pipe of a pump is attached. ('wet 'wel)

**whealer** [CIVIL ENGINEERING] See waler. ('wel-ər)

**wharf** [CIVIL ENGINEERING] A structure of open construction built parallel to the shoreline; used by vessels to receive and discharge passengers and cargo. ('wɜ:lf)

**wheel** [DESIGN ENGINEERING] A circular frame with a hub at the center for attachment to an axle, about which it may revolve and bear a load. ('wel)

**wheelbarrow** [ENGINEERING] A small, hand-pushed vehicle with a single wheel and axle between the front ends of two shafts that support a boxlike body and serve as handles at the rear. Also known as barrow. ('wel-bar-ə)

**wheel base** [DESIGN ENGINEERING] The distance in the direction of travel from front to rear wheels of a vehicle, measured between centers of ground contact under each wheel. ('wel 'bæ:s)

**wheel dresser** [ENGINEERING] A tool for cleaning, reshaping, and restoring the mechanical accuracy of the cutting faces of grinding wheels. ('wel 'dres-ər)

**wheeled crane** [MECHANICAL ENGINEERING] A self-propelled crane that rides on a rubber-tired chassis with power for transportation provided by the same engine that is used for hoisting. ('wel-d 'kri:n)

**wheel load capacity** [CIVIL ENGINEERING] The capacity of airfield runways, taxiways, parking areas, or roadways to bear the pressures exerted by aircraft or vehicles in a gross weight static configuration. ('wel 'lɒd kə-pə-səd-ē)

**wheel sleeve** [DESIGN ENGINEERING] A flange

used as an adapter on precision grinding machines where the hole in the wheel is larger than the machine arbor. ('wel 'sli:v)

**white coat** [BUILDING CONSTRUCTION] The finishing coat in plastering. ('wɪt 'kəʊt)

**Whitworth screw thread** [DESIGN ENGINEERING] A British screw thread standardized to form and dimension. ('wɪt-wɜ:θ 'skru:θreɪd)

**wicket dam** [CIVIL ENGINEERING] A movable dam consisting of a number of rectangular panels of wood or iron hinged to a sill and propped vertically; the prop is hinged and can be tripped to drop the wickets flat on the sill. ('wɪk-ət 'dæm)

**wicking** [ENGINEERING] The flow of solder under the insulation of covered wire. ('wɪk-ɪŋ)

**wide-flange beam** [CIVIL ENGINEERING] See H beam. ('waɪd 'flæŋ 'bi:m)

**Wiess formula** [ENGINEERING] An empirical relationship for motor fuel antiknock values above 100 in relation to performance numbers; basis for the American Society for Testing and Materials scale, in which octane numbers above 100 are related to increments of tetraethyllead added to isooctane. ('wi:z 'fɔ: mɪy-ə-lə)

**wild fence** [ENGINEERING] A wooden enclosure about 16 feet square and 8 feet high with a precipitation gage in its center; the function of the fence is to minimize eddies around the gage, and thus ensure a catch which will be representative of the actual rainfall or snowfall. ('wɪld 'fens)

**Willans line** [MECHANICAL ENGINEERING] The line (nearly straight) on a graph showing steam consumption (pounds per hour) versus power output (kilowatt or horsepower) for a steam engine or turbine; frequently extended to show total fuel consumed (pounds per hour) for gas turbines, internal combustion engines, and complete power plants. ('wɪl-ənz 'li:n)

**winch** [MECHANICAL ENGINEERING] A machine having a drum on which to coil a rope, cable, or chain for hauling, pulling, or hoisting. ('wɪnʃ)

**winch operator** [ENGINEERING] See hoistman. ('wɪnʃ ə-pə-ɹəd-ər)

**windage** [MECHANICS] 1. The deflection of a bullet or other projectile due to wind. 2. The correction made for such deflection. ('wɪn-dʒ)

**windage loss** [ENGINEERING] In a ventilating or air-conditioning system, the decrease in the water content of the circulating air due to the loss of entrained droplets of water, expressed as a percentage of the rate of circulation. ('wɪn-dʒ 'lɒs)

**wind box** [ENGINEERING] A plenum chamber that supplies air for combustion to a stoker, gas burner, or oil burner. ('wɪnd 'bɒks)

**windbreak** [ENGINEERING] Any device designed to obstruct wind flow and intended for protection against any ill effects of wind. ('wɪn-brɪk)

**wind cone** [ENGINEERING] A tapered fabric sleeve, shaped like a truncated cone and pivoted at its larger end on a standard, for the purpose of indicating wind direction, since the air enters the fixed end, the small end of the cone points away from the wind. Also known as wind sleeve; wind sock. ('wɪn 'kɒn)

**wind correction** [ENGINEERING] Any adjustment